1. (CURRENTLY AMENDED) A method of screening for inhibitors of beta-amyloid production comprising,

1) contacting a potential inhibitor of beta-amyloid production and a tagged inhibitor of beta-amyloid production with at least one macromolecule involved in the processing of APP and the production of beta-amyloid peptide, wherein the macromolecule is a secretase selected from alpha-secretase, beta secretase, and gamma-secretase, said macromolecule containing a binding site specific for said tagged inhibitor of beta-amyloid production;

2) separating the tagged inhibitor of beta-amyloid production bound to said macromolecule from the tagged inhibitor of beta-amyloid production free from said macromolecule; and

3) determining an inhibitory concentration of the potential inhibitor of beta-amyloid production from the concentration of tagged inhibitor of beta-amyloid production bound to said macromolecule.

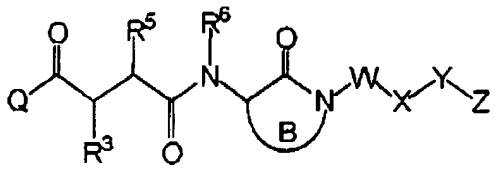
2. (ORIGINAL) The method of Claim 1 wherein the tagged inhibitor of beta-amyloid production comprises a radiolabeled inhibitor of beta-amyloid production, a fluoroscence labeled inhibitor of beta-amyloid production or a biotin labeled inhibitor of beta-amyloid production.

3. (ORIGINAL) The method of Claim 1 wherein the tagged inhibitor of beta-amyloid production comprises a radiolabeled inhibitor of beta-amyloid production.

4. (ORIGINAL) The method of Claim 1 wherein the tagged inhibitor of beta-amyloid production comprises a tritium or iodine radiolabeled inhibitor of beta-amyloid production.

5. (ORIGINAL) The method of Claim 1 wherein the tagged inhibitor of beta-amyloid production comprises a tritium radiolabeled inhibitor of beta-amyloid production.

6. (CURRENTLY AMENDED) The method of Claim 1 wherein the tagged inhibitor of beta-amyloid production comprises a compound of the Formula (I):



(I)

wherein:

at least one atom of the compound of the Formula (I) is radiolabeled;

Q is NH_2;

R^3 is C_1-C_6 alkyl substituted with 0-1 R^4;

R^4 is H, OH, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_{10} carbocycle, C_6-C_{10} aryl, or 5 to 10 membered heterocycle;

R^5 is H, OR^{14};

C_1-C_6 alkyl substituted with 0-3 R^{5b};

C_1-C_6 alkoxy substituted with 0-3 R^{5b};

C_2-C_6 alkenyl substituted with 0-3 R^{5b};

C_2-C_6 alkynyl substituted with 0-3 R^{5b};

C_3-C_{10} carbocycle substituted with 0-3 R^{5c};

~~C_6-C_{10}~~ aryl substituted with 0-3 R^{5c}; or

5 to 10 membered heterocycle substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from:

H, C_1-C_6 alkyl, CF_3, OR^{14}, Cl, F, Br, I, =O, CN, NO_2, $NR^{15}R^{16}$;

C_3-C_{10} carbocycle substituted with 0-3 R^{5c};

~~C_6-C_{10}~~-aryl substituted with 0-3 R^{5c}; or

5 to 10 membered heterocycle substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;

R^6 is H;

C_1-C_6 alkyl substituted with 0-3 R^{6a};

C_3-C_{10} carbocycle substituted with 0-3 R^{6b}; or

~~C_6-C_{10}~~ aryl substituted with 0-3R^{6b};

R^{6a}, at each occurrence, is independently selected from H, C_1-C_6 alkyl, OR^{14}, Cl, F, Br, I, =O, CN, NO_2, $NR^{15}R^{16}$, phenyl or CF_3;

R^{6b}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;

W is $-(CR^8R^{8a})_p-$;

p is 0 to 4;

R^8 and R^{8a}, at each occurrence, are independently selected from H, C_1-C_4 alkyl, C_2-C_4 alkenyl, C_2-C_4 alkynyl and C_3-C_8 cycloalkyl;

X is a bond;

C_6-C_{10} aryl substituted with 0-3 R^{Xb};

C_3-C_{10} carbocycle substituted with 0-3 R^{Xb}; or

5 to 10 membered heterocycle substituted with 0-3 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;

Y is a bond or $-(CR^9R^{9a})_t$-V-$(CR^9R^{9a})_u-$;

t is 0 to 3;

u is 0 to 3;

R^9 and R^{9a}, at each occurrence, are independently selected from H, C_1-C_6 alkyl or C_3-C_8 cycloalkyl;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, $-S(=O)_2-$, $-N(R^{19})-$, $-C(=O)NR^{19b}-$, $-NR^{19b}C(=O)-$, $-NR^{19b}S(=O)_2-$, $-S(=O)_2NR^{19b}-$, $-NR^{19b}S(=O)-$, $-S(=O)NR^{19b}-$, -C(=O)O-, or -OC(=O)-;

Z is H;

C_1-C_8 alkyl substituted with 0-2 R^{12};

C_2-C_4 alkenyl substituted with 0-2 R^{12};

C_2-C_4 alkynyl substituted with 0-2 R^{12};

~~C_6-C_{10}~~ aryl substituted with 0-4 R^{12b};

C_3-C_{10} carbocycle substituted with 0-4 R^{12b}; or

5 to 10 membered heterocycle substituted with 0-3 R^{12b};

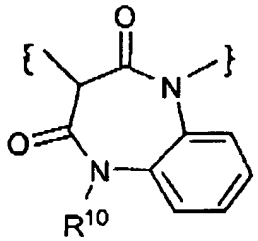
R^{12} is ~~C_6-C_{10}~~ aryl substituted with 0-4 R^{12b};

C_3-C_{10} carbocycle substituted with 0-4 R^{12b}; or

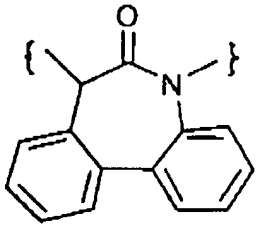
5 to 10 membered heterocycle substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;

B is



or



~~a 5 to 10 membered lactam, wherein the lactam is saturated, partially saturated or unsaturated; wherein each additional lactam carbon is substituted with 0-2 R^{11}; and, optionally, the lactam contains a heteroatom selected from -O-, -S-, -S(=O)-, -S(=O)$_2$-, -N=, and -N(R^{10})-;~~

R^{10} is H, C(=O)R^{17}, C(=O)OR^{17}, C(=O)N$R^{18}R^{19}$,

$S(=O)_2NR^{18}R^{19}$, $S(=O)_2R^{17}$;

C_1-C_6 alkyl optionally substituted with R^{10a};

~~C_6-C_{10}~~ aryl substituted with 0-4 R^{10b};

C_3-C_{10} carbocycle substituted with 0-3 R^{10b}; or

5 to 10 membered heterocycle optionally substituted with 0-3 R^{10b};

R^{10a}, at each occurrence, is independently selected from H, C_1-C_6 alkyl, C_3-C_6 cycloalkyl, OR^{14}, Cl, F, Br, I, =O, CN, NO_2, $NR^{15}R^{16}$, phenyl or CF_3;

R^{10b}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;

~~R^{11} is C_1-C_4 alkoxy, Cl, F, Br, I, =O, CN, NO_2, $NR^{18}R^{19}$, $C(=O)R^{17}$, $C(=O)OR^{17}$, $C(=O)NR^{18}R^{19}$, $S(=O)_2NR^{18}R^{19}$, CF_3;~~

~~C_1-C_6 alkyl optionally substituted with R^{11a};~~

~~C_6-C_{10} aryl substituted with 0-3 R^{11b};~~

~~C_3-C_{10} carbocycle substituted with 0-3 R^{11b}; or~~

~~5 to 10 membered heterocycle substituted with 0-3 R^{11b};~~

~~alternatively, two R^{11} substituents on the same carbon atoms may be combined to form a C_3-C_6 carbocycle;~~

~~alternatively, two R^{11} substituents on adjacent carbon atoms may be combined to form a C_3-C_6 carbocycle or a benzo fused radical, wherein said benzo fused radical is substituted with 0-3 R^{13};~~

~~R^{11a}, at each occurrence, is independently selected from H, C_1-C_6 alkyl, OR^{14}, Cl, F, Br, I, =O, CN, NO_2, $NR^{15}R^{16}$, phenyl or CF_3;~~

~~R^{11b}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;~~

~~R^{13}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2, $NR^{15}R^{16}$, or CF_3;~~

R^{14} is H, phenyl, benzyl, C_1-C_6 alkyl, or C_2-C_6 alkoxyalkyl;

R^{15}, at each occurrence, is independently selected from H, C_1-C_6 alkyl, benzyl, phenethyl, -C(=O)-(C_1-C_6 alkyl) and -S(=O)$_2$-(C_1-C_6 alkyl);

R^{16}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, benzyl, phenethyl, -C(=O)-(C_1-C_6 alkyl) and -S(=O)$_2$-(C_1-C_6 alkyl);

R^{17} is H, phenyl, benzyl, C_1-C_6 alkyl, or C_2-C_6 alkoxyalkyl;

R^{18}, at each occurrence, is independently selected from H, C_1-C_6 alkyl, benzyl, phenethyl, -C(=O)-(C_1-C_6 alkyl) and -S(=O)$_2$-(C_1-C_6 alkyl); and

R^{19}, at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, -C(=O)-(C_1-C_6 alkyl) and -S(=O)$_2$-(C_1-C_6 alkyl);

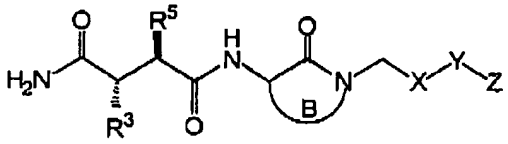
R^{19b} is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, benzyl or phenethyl; and

R^{20} is H or C_1-C_6 alkyl.

7. (ORIGINAL) The method of Claim 6 wherein R^3 is C_3-C_6 alkyl.

8. (ORIGINAL) The method of Claim 6 wherein R^3 is C_3-C_6 alkyl substituted with about 1 to about 4 ^3H.

9. (ORIGINAL) The method of Claim 6 wherein the tagged inhibitor of beta-amyloid production comprises a compound of the Formula (II):



(II)

wherein:

at least one atom of the compound of the Formula (II) is radiolabeled.

10. (ORIGINAL) The method of Claim 9 wherein R^3 is C_3-C_6 alkyl substituted with about 1 to about 4 ^3H.

11. - 12 (CANCELLED)

13. (CURRENTLY AMENDED) The method of Claim 1 wherein at least one macromolecule involved in the processing of APP and the production of beta-amyloid peptide comprises alpha, beta or gamma-secretase ~~presenilin-1 or a fragment of presenilin-1~~.

14. (CURRENTLY AMENDED) The method of Claim 1 wherein at least one macromolecule involved in the processing of APP and/or the production of beta-amyloid peptide ~~comprises~~ comprises:

~~(1) presenilin-1;~~

~~(2) presenilin-2;~~

(1) ~~(3)~~ β secretase;

(2) ~~(4)~~ α secretase; or

(3) ~~(5)~~ γ secretase; ~~or~~

~~(6) BACE/memapsin 2;~~

or any fragment or derivative thereof.

15. (ORIGINAL) The method of Claim 1 wherein the inhibitory concentration is half maximal inhibitory concentration.

16. (ORIGINAL) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a therapeutically effective amount of an inhibitor of beta-amyloid production identified by the screening assay of Claim 1 or a pharmaceutically acceptable salt or prodrug form thereof.

17. (CURRENTLY AMENDED) A method for treating degenerative neurological disorders involving beta-amyloid production comprising administering to a host in need of such treatment a therapeutically effective amount of an inhibitor of beta-amyloid production identified by the screening assay of Claim 1 or a pharmaceutically acceptable salt ~~or prodrug~~ form thereof.

18. (CURRENTLY AMENDED) A method for treating Alzheimer's disease comprising administering to a host in need of such treatment a therapeutically effective amount of an inhibitor of beta-amyloid production identified by the screening assay of Claim 1 or a pharmaceutically acceptable salt ~~or prodrug~~ form thereof.

19. (CANCELLED)

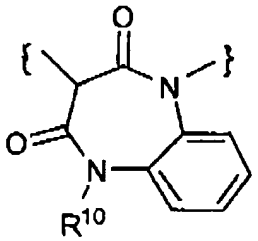
20. (CURRENTLY AMENDED) The method of Claim ~~19~~ 1 wherein the tagged inhibitor of beta-amyloid production comprises a radiolabeled inhibitor of beta-amyloid production, a fluoroscence labeled inhibitor of beta-amyloid production, or a biotin labeled inhibitor of beta-amyloid production~~, a photoaffinity labeled inhibitor of beta-amyloid production, or any combination of tags thereof in one inhibitor of beta-amyloid production~~.

21. (CURRENTLY AMENDED) The method of Claim 1 ~~19~~ wherein the tagged inhibitor of beta-amyloid production comprises a radiolabeled inhibitor of beta-amyloid production.

22. (CURRENTLY AMENDED) The method of Claim 1 ~~19~~ wherein the tagged inhibitor is radiolabeled with one or more radioisotope selected from ^{3}H, ^{11}C, ^{14}C, ^{18}F, ^{32}P, ^{35}S, ^{123}I, ^{125}I, or ^{131}I ~~of beta-amyloid production comprises a tritium labeled inhibitor of beta amyloid production~~.

23.-35. (CANCELLED)

36. (CURRENTLY AMENDED) An inhibitor of beta-amyloid production comprising a compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said binding site is a specific binding site for a compound of Formula (I) ~~(I-7T) or (I-43T) wherein m is about 2~~ as claimed in claim 1 wherein ring B is



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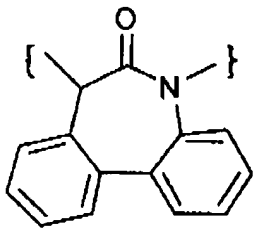


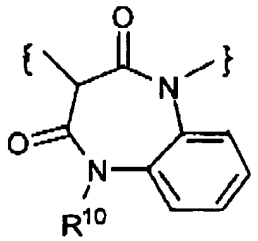
37. **(CURRENTLY AMENDED)** An inhibitor of beta-amyloid production of Claim 36 wherein the macromolecule involved in the production of beta-amyloid peptide is alpha-secretase, beta-secretase, or gamma-secretase, ~~presenilin 1~~ or a fragment thereof ~~presenilin 1~~.

38. **(CURRENTLY AMENDED)** An inhibitor of beta-amyloid production of Claim 36 wherein the macromolecule involved in the production of beta-amyloid peptide is gamma-secretase ~~presenilin 2~~ or a fragment thereof ~~presenilin 2~~.

39. **(CURRENTLY AMENDED)** An inhibitor of beta-amyloid production of Claim 36 comprising a compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said ~~binding site is a specific binding site for a compound of Formula (I-7T) wherein m is about 2; and the~~ compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

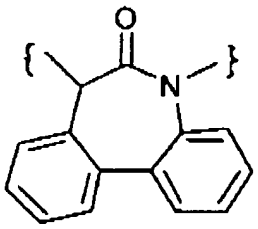
40. **(CURRENTLY AMENDED)** An inhibitor of beta-amyloid production of Claim 36 comprising a compound which interacts with a binding site on gamma-secretase ~~presenilin 1~~ or a fragment of gamma-secretase ~~presenilin 1~~; wherein ~~said binding site is a specific binding site for a compound of Formula (I-7T) wherein m is about 2; and~~ the compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

41. **(CURRENTLY AMENDED)** An inhibitor of beta-amyloid production of Claim ~~36~~ 6 comprising a compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said binding site is a specific binding site for a compound of Formula (I-~~43T~~) wherein B is ~~m is about 2~~



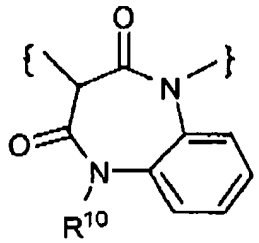
and the compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

42. (CURRENTLY AMENDED) An inhibitor of beta-amyloid production of Claim ~~36~~ 6 comprising a compound which interacts with a binding site on gamma-secretase ~~presenilin 1~~ or a fragment of gamma-secretase ~~presenilin 1~~; wherein said binding site is a specific binding site for a compound of Formula (I ~~43T~~) wherein ~~m is about 2~~ B is

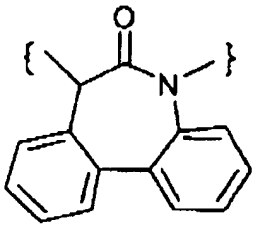


and the compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

43. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 6 comprising a tagged compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said binding site is a specific binding site for a compound of Formula (I) ~~(I 7T) or (I 43T)~~ wherein ~~m is about 2~~ ring B is:



or



44. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 43 wherein the macromolecule involved in the production of beta-amyloid peptide is alpha-, beta-, or gamma-secretase ~~presenilin 1~~ or a fragment thereof ~~presenilin 1~~.

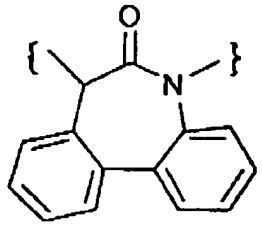
45. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 43 wherein the macromolecule involved in the production of beta-amyloid peptide is gamma-secretase ~~presenilin 2~~ or a fragment thereof ~~presenilin 2~~.

46. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 43 comprising a tagged compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said ~~binding site is a specific binding site for a compound of Formula (I-7T) wherein m is about 2; and the~~ tagged compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

47. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 43 comprising a tagged compound which interacts with a binding site on alpha-, beta-, or gamma-

secretase ~~presenilin 1~~ or a fragment thereof ~~presenilin 1~~; wherein said ~~binding site is a specific binding site for a compound of Formula (I-7T) wherein m is about 2; and the~~ tagged compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

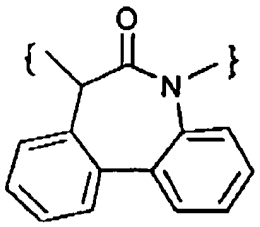
48. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 6 ~~43~~ comprising a tagged compound which interacts with a binding site on a macromolecule involved in the production of beta-amyloid peptide; wherein said binding site is a specific binding site for a compound of Formula (I) ~~(I-43T)~~ wherein ~~m is about 2~~ ring B is



;

and the tagged compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

49. (CURRENTLY AMENDED) A tagged inhibitor of beta-amyloid production of Claim 48 ~~43~~ comprising a tagged compound which interacts with a binding site on presenilin 1 or a fragment of presenilin 1; wherein said binding site is a specific binding site for a compound of Formula (I) ~~(I-43T)~~ wherein ~~m is about 2~~ ring B is:



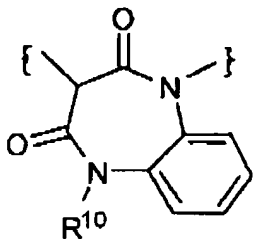
;

and the tagged compound demonstrates a half maximal inhibitory concentration less than 10 micromolar for beta-amyloid production.

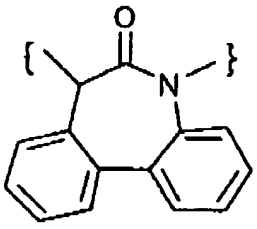
50. – 53. (CANCELLED)

54. (CURRENTLY AMENDED) A method of treating Alzheimer's disease comprising administering to a host in need of such treatment a therapeutically effective amount of an inhibitor of beta-amyloid production, or a pharmaceutically acceptable salt ~~or prodrug~~ form thereof, wherein said inhibitor of beta-amyloid production binds to a binding site on a macromolecule involved in the production of beta-amyloid peptide and effects a decrease in production of beta-amyloid peptide;

wherein said binding site is a specific binding site for a compound of Formula (I) of Claim 6 ~~(I-7T) or (I-43T) wherein m is about 2~~ wherein ring B is:



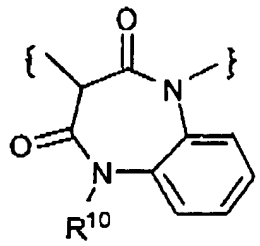
or



.

55. (CURRENTLY AMENDED) The method of Claim 54 wherein the macromolecule comprises alpha-, beta-, or gamma-secretase ~~presenilin-1, a fragment of presenilin-1, presenilin-2~~, or a fragment thereof ~~presenilin-2~~.

56. (CURRENTLY AMENDED) A method of Claim 54 wherein the binding site is a specific binding site for a compound of Formula (I) ~~(I-43T)~~ wherein ~~m is about 2~~ ring B is:



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57. (CURRENTLY AMENDED) The method of Claim 56 wherein the macromolecule comprises alpha -, beta-, or gamma-secretase ~~presenilin 1~~ or a fragment thereof ~~presenilin 1~~.

58. (CURRENTLY AMENDED) The method of Claim 56 wherein the macromolecule comprises gamma-secretase, ~~presenilin 2~~ or a fragment thereof ~~presenilin 2~~.

59. (CURRENTLY AMENDED) A method of in vivo diagnostic imaging comprising administering to a subject a diagnostically effective amount of a radiolabeled inhibitor of Claim 6 of beta-amyloid production.

60. (ORIGINAL) A method of Claim 59 wherein said method is used in the diagnosis of a neurological disease which involves APP processing or elevated levels of beta-amyloid, or both.

61. (ORIGINAL) A method of Claim 59 wherein said method is used in the diagnosis of Alzheimer's disease.

62. (ORIGINAL) A method of Claim 59 wherein the radiolabeled inhibitor is suitable for imaging of the brain of the subject.

63. (ORIGINAL) A method of Claim 59 wherein the radiolabeled inhibitor is radiolabeled with one or more radioisotope selected from ^{3}H, ^{11}C, ^{14}C, ^{18}F, ^{32}P, ^{35}S, ^{123}I, ^{125}I, or ^{131}I.

64. (ORIGINAL) A method of Claim 59 wherein the inhibitor of beta-amyloid production is a compound selected from any compound disclosed in or within the scope of compounds disclosed in a reference selected from:

(1) United States patent US 5,703,129;

(2) PCT application WO98/22441 (or its priority USSN 08/755,444);

(3) PCT application WO98/22433 (or its priority USSN 08/807,538);

(4) PCT application WO98/22430 (or its priority USSN 08/754,895);

(5) PCT application WO98/22493 (or its priority USSN 08/755,334);

(6) PCT application WO98/22494 (or its priorities USSN 08/808,528, 08/807,528 or 08/807,427);

(7) PCT application WO98/28268 (or its priority USSN 08/780,025);

(8) PCT application WO98/38177;

(9) PCT application WO95/09838

(10) PCT application WO99/67221;

(11) PCT application WO99/67220;

(12) PCT application WO99/67219;

(13) PCT application WO95/66934;

(14) PCT application WO00/24392; or

(15) Ghosh et al., JACS (2000) 122:3522-2523;

or any compound which inhibits beta-amyloid production and binds competitively with any of the foregoing compounds in any of the assays described in the Utility section hereof;

all of which foregoing references are hereby incorporated by reference in their entirety.

65. (CURRENTLY AMENDED) A method of Claim 59 wherein the inhibitor of beta-amyloid production exhibits activity as an inhibitor of gamma-secretase ~~in the method of any of Claim 1~~.

66. - 69. (CANCELLED)

70. (CURRENTLY AMENDED) A method of Claim 59 wherein the inhibitor of beta-amyloid production is selected from:

~~(1) an inhibitor of presenilin-1;~~

~~(2) an inhibitor of presenilin-2;~~

(1)~~(3)~~ an inhibitor of β secretase;

(2) ~~(4)~~ an inhibitor of α secretase; or

(3) ~~(5)~~ an inhibitor of γ secretase; ~~or~~

~~(6) an inhibitor of BACE/memapsin 2~~.

71. (CURRENTLY AMENDED) A pharmaceutical composition comprising a compound of Claim 6 suitable for in vivo diagnostic imaging comprising a radiolabeled inhibitor of beta-amyloid production.

72. (ORIGINAL) A pharmaceutical composition of Claim 71 wherein the composition is used in the diagnosis of a neurological disease which involves APP processing or elevated levels of beta-amyloid, or both.

73. (ORIGINAL) A pharmaceutical composition of Claim 71 wherein the composition is used in the diagnosis of Alzheimer's disease.

74. (ORIGINAL) A pharmaceutical composition of Claim 71 wherein the radiolabeled inhibitor is suitable for imaging of the brain of the subject.

75. (ORIGINAL) A pharmaceutical composition of Claim 71 wherein the radiolabeled inhibitor is radiolabeled with one or more radioisotope selected from ^{3}H, ^{11}C, ^{14}C, ^{18}F, ^{32}P, ^{35}S, ^{123}I, ^{125}I, or ^{131}I.

76. (ORIGINAL) A pharmaceutical composition of Claim 71 wherein the inhibitor of beta-amyloid production is a compound selected from any compound disclosed in or within the scope of compounds disclosed in a reference selected from:

(1) United States patent US 5,703,129;

(2) PCT application WO98/22441 (or its priority USSN 08/755,444);

(3) PCT application WO98/22433 (or its priority USSN 08/807,538);

(4) PCT application WO98/22430 (or its priority USSN 08/754,895);

(5) PCT application WO98/22493 (or its priority USSN 08/755,334);

(6) PCT application WO98/22494 (or its priorities USSN 08/808,528, 08/807,528 or 08/807,427);

(7) PCT application WO98/28268 (or its priority USSN 08/780,025);

(8) PCT application WO98/38177;

(9) PCT application WO95/09838;

(10) PCT application WO99/67221;

(11) PCT application WO99/67220;

(12) PCT application WO99/67219;

(13) PCT application WO95/66934;

(14) PCT application WO00/24392; or

(15) Ghosh et al., JACS (2000) 122:3522-2523;

or any compound which inhibits beta-amyloid production and binds competitively with any of the foregoing compounds in any of the assays described in the Utility section hereof;

all of which foregoing references are hereby incorporated by reference in their entirety.

77. [[75]]. **(CURRENTLY AMENDED)** A pharmaceutical composition of Claim 71 wherein the inhibitor of beta-amyloid production is ~~selected from~~:

(1) ~~an inhibitor of presenilin-1;~~

~~(2) an inhibitor of presenilin-2;~~

~~(3) an inhibitor of β secretase;~~

~~(4) an inhibitor of α secretase;~~

~~(5)~~ an inhibitor of γ secretase~~; or~~

~~(6) an inhibitor of BACE/memapsin 2~~.